Figure 1

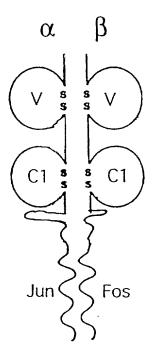


Figure 2

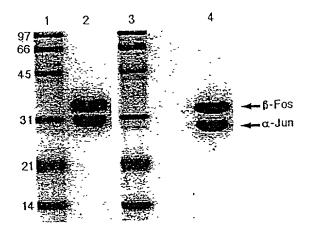
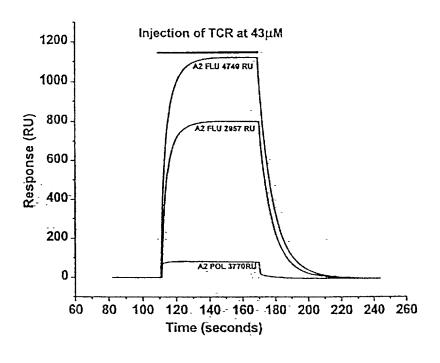


Figure 3



Α

Poly-C 'anchor primer':

Xho I

5'- TAA ATA CIC CAG CCC CCC CCC CCC CCC CCC CCC -3'

В

TCR  $\alpha$  chain constant region specific primer:

Xma I

5'- MIA TAA CCC GGG GAA CCA CAT CCC CAC AGG AAC TITT CTG GGC TGG GCA -3'

C

TCR  $\beta$  chain constant region specific primer:

Xma I

5'- ATA TAA 000 000 CAA 00A CAT 000 CAC AGT CTG CTC TAC 000 AGG 00 -3'

A

*c-jun* 5' primer:

Xma I

5'- CATACACCCGGGGTAGAATCGCCCGGCTGGAG -3'

В

c-jun 3' primer:

Xho I

5' - GIGIGICCICGACGAICCIAGIAGITCATGACITICIGITTAACCIGICC -3'

Bam HI

 $\mathbf{C}$ 

*c-fos* 5' primer:

Xma I

5' -CATACACCOGGGGTCTGACTGATACACTCCAAGCGGAG -3'

D

*c-fos* 3' primer:

Xho I

5'- TGTGTGCTCGAGGATCCTAGTAAGCTGCCAGGATGAACTCTAGTTTTTC -3'

Bam HI

Figure 6.

⋖

A GCG CIG E GAG ა ლ ე ე N AAC CAG GCT K AAA HH C ACC ACC K AAA GTG K AAA GAA GAG CIG ე ემე GCC GCC I ATC

-31 Y L R E Q V A Q L K Q K V M N CTC AGG GAA CAG GTG GCA CAG CTT AAA CAG AAA GTC ATG AAC A N M GCC AAC ATG S T TCC ACG (

C-jun leucine zipper DNA and amino acid (one-letter code) sequences as fused to TCR alfa chains.

Д

CAG S T T T K AAG E GAG D GAT GAA L CTA CAA GAC E T GAG ACA ₽ 606 CAA CHC CHC D T GAT ACA T ACT CIG 5,-

-3, Y TAC A GCT A GCA L CTG . ATC EGAG L CTA K E K AAG GAA AAA ( T E I A N L L K E ACC GAG ATT GCC AAC CTG CTG AAG GAG

C-fos leucine zipper DNA and amino acid (one-letter code) sequences as fused to TCR beta chains.

#### Α

Mutation of cysteine to serine, forwards (sense) primer, indicating amino acid sequence and the mutation:

D S R Y S L S S

5'- GAC TCC AGA TAC AGC CIG AGC AGC CG -3'

## В

Mutation of cysteine to serine, backwards (nonsense) primer:

5'- CG GCT GCT CAG GCT GTA TCT GGA GTC -3'

### (

Mutation of cysteine to alanine, forwards (sense) primer, indicating amino acid sequence and the mutation:

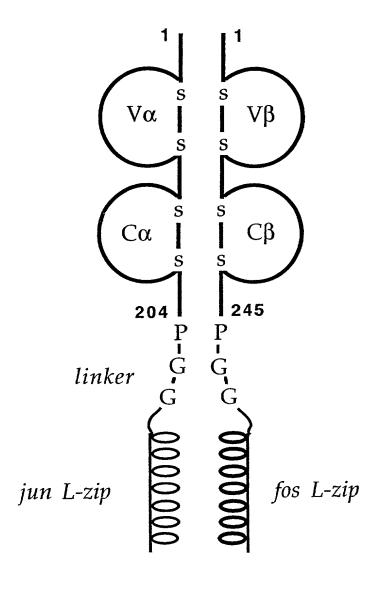
D S R Y A L S S 5'- GAC TOC AGA TAC GCT CTG AGC AGC CG -3'

# D

Mutation of cysteine to alanine, backwards (nonsense) primer:

5'- CG GCT GCT CAG AGC GTA TCT GGA GTC -3'

Figure 8



## Α

5' PCR primer for the human  $V\alpha 10.2$  chain of the JM22 Influenza Matrix peptide-HLA-A0201 restricted TCR:

M Q L L E Q S P Q F L 5'- gctctaga<u>cat ATG</u> CAa CTa CTa GAa CAa AGt CCT CAG TTT CTA Nde I

S I Q E AGC ATC CAA GAG G -3'

В

5' PCR primer for the human  $V\beta17$  chain of the JM22 Influenza Matrix peptide-HLA-A0201 restricted TCR:

M V D G G I T Q S 5'- gctctaga<u>cat ATG</u> GIG GAT GGT GGA ATC ACT CAG TCC C -3' Nde I

 $\boldsymbol{C}$ 

5' PCR primer for the mouse  $V\alpha 4$  chain of the Influenza nucleoprotein peptide-H2-D<sup>b</sup> restricted TCR:

M D S V T Q M Q G Q V 5'- gctctaga<u>cat ATG</u> GAt TCt GTt ACt CAa ATG CAa GGt CAa GTG Nde I

T L S S ACC CTC TCA TCA G -3' Figure 9 (continued)

### D

5' PCR primer for the mouse  $V\beta11$  chain of the Influenza nucleoprotein peptide-H2-D<sup>b</sup> restricted TCR:

M E P T N A G V I Q 5'- gctctaga<u>cat ATG</u> GAa CCa ACa AAt GCt GGt GTt ATC CAA

T P R H ACA CCT AGG CAC -3'

 $\dot{E}$  5' PCR primer for the human V $\alpha$ 23 chain of the 003 HIV-1 Gag peptide-HLA-A0201 restricted TCR:

M K Q E V T Q I 5'- ggaattc<u>cat atg</u> AAA CAa GAG GIt ACa CAa AIT CC -3' Nde I

F

5' PCR primer for the human V $\beta$ 5.1 chain of the 003 HIV-1 Gag peptide-HLA-A0201 restricted TCR:

 $\,$  M  $\,$  K  $\,$  A  $\,$  G  $\,$  V  $\,$  T  $\,$  Q  $\,$  T  $\,$  5'- ggaattc<u>cat atg</u> AAa GCT GGA GTt ACT CAA ACT CC -3'

Figure 9 (continued)

G

5' PCR primer for the human  $V\alpha 2.3$  chain of the HTLV-1 Tax peptide-HLA-A0201 restricted A6 TCR:

M Q K E V E Q K 5'-ccccc cat ATG CAG AAG GAA GIG GAG CAG AAC -3' Nde I

H

 $5^{\prime}$  PCR primer for the human V $\beta$ 12.3 chain of the HTLV-1 Tax peptide-HLA-A0201 restricted A6 TCR:

 $$\rm M$  K A G V T Q T  $$\rm 5'-$  ccccc cat ATG AAC GCT GGT GTC ACT CAG ACC -3' Nde I

1
5' PCR primer for the human Vα17.2 chain of the HTLV-1 Tax peptide-HLA-A0201 restricted B7 TCR:

M Q Q K N D D Q Q V 5'-ccccc cat ATG CAA CAa AAa AAT GAT GAC CAG CAA GTT Nde I

K Q N AAG CAA AAT -3' Figure 9 (continued)

J
5' PCR primer for the human Vβ12.3 chain of the HTLV-1 Tax peptide-HLAA0201 restricted B7 TCR:

M N A G V T Q T P K F 5'-ccccc cat ATG AAC GCT GGT GTC ACT CAG ACC CCA AAA TTC Nde I

Q CAG -3'

K 3' PCR primer for human  $\text{C}\alpha$  chains, generally applicable:

5'- cataca <u>ccc gog</u> GGA ACT TIC TGG GCT GGG GAA GAA GG -3'
Xma I

 $\boldsymbol{L}$  3' PCR primer for human  $\boldsymbol{C}\boldsymbol{\beta}$  chains, generally applicable:

5'- cataca <u>ccc gog</u> GTC TGC TCT ACC CCA GGC CTC -3' Xma I

TCR alfa>

M Q L L E Q S P Q F L S I Q E G E N L T ATGCAaCTaCTaGAaCAaGtCCTCAGTTTCTAAGCATCCAAGAGGGAGAAAATCTCACT

V Y C N S S S V F S S L Q W Y R Q E P G GTGTACTGCAACTCCTCAAGTGTTTTTTCCAGCTTACAATGGTACAGCAGCAGGAGCCTGGG

E G P V L L V T V V T G G E V K K L K R GAAGGTCCTGTCCTCCTGGTGACAGTAGTTACGGGTGGAGAAGTGAAGAGCTGAAGAGA

L T F Q F G D A R K D S S L H I T A A Q CTAACCTTTCAGTTTGGTGATGCAAGAAAGGACAGTTCTCTCCACATCACTGCGGCCCAG

P G D T G L Y L C A G A G S Q G N L I F CCTGGTGATACAGGCCTCTGCGGGAGGGAGGCGAAGCCAAGGAAATCTCATCTTT

G K G T K L S V K P N I Q N P D P A V Y GGAAAAGGCACTAAACTCTCTGTTAAACCAAATATCCAGAACCCTGACCCTGCCGTGTAC

Q L R D S K S S D K S V C L F T D F D S CAGCTGAGAGACTCTAAATCCAGTGACAAGTCTGTCTGCCTATTCACCGATTTTGATTCT

Q T N V S Q S K D S D V Y I T D K T V L

CAAACAAATGTGTCACAAAGTAAGGATTCTGATGTGTATATCACAGACAAAACTGTGCTA

D M R S M D F K S N S A V A W S N K S D GACATGAGGTCTATGGACTTCAAGAGCAACAGTGCTGTGGCCTGGAGCAACAAATCTGAC

FACANAFNNSIIPEDTFFPS

<TCR alfa <u>linker</u> c-jun>

PESSPGGRIARLEEKVKTLK CCAGAAAGTTCCcccgggGGTAGAATCGCCCGGCTGGAGGAAAAAGTGAAAACCTTGAAA

A Q N S E L A S T A N M L R E Q V A Q L GCTCAGAACTCGGAGCTGGCGTCCACGGCCAACATGCTCAGGGAACAGGTGGCACAGCTT

K Q K V M N Y \*
AAACAGAAAGTCATGAACTACTAG

TCR beta>

V T L S C E Q N L N H D A M Y W Y R Q D GTGACCCTGAGTTGTGAACAGAATTTGAACCACGATGCCATGTACTGGTACCGACAGGAC

P G Q G L R L I Y Y S Q I V N D F Q K G CCAGGGCAAGGGCTGAGATTGATCTACTACTCACAGATAGTAAATGACTTTCAGAAAGGA

D I A E G Y S V S R E K K E S F P L T V
GATATAGCTGAAGGGTACAGCGTCTCTCGGGAGAAGAAGAATCCTTTCCTCTCACTGTG

T S A Q K N P T A F Y L C A S S S R S Sq ACATCGGCCCAAAAGAACCCGACAGCTTTCTATCTCTGTGCCAGTAGTTCGAGGAGCTCC

Y E Q Y F G P G T R L T V T E D L K N V TACGAGCAGTACTTCGGGCCGGGCACCAGGCTCACGGTCACAGAGGACCTGAAAAACGTT

F P P E V A V F E P S E A E I S H T Q K
TTCCCACCCGAGGTCGCTGTGTTTGAACCATCAGAAGCAGAGATCTCCCACACCCAAAAG

A T L V C L A T G F Y P D H V E L S W W

GCCACACTGGTGTGCCTGGCCACAGGCTTCTACCCCGACCACGTGGAGCTGAGCTGGTGG

V N G K E V H S G V S T D P Q P L K E Q GTGAATGGGAAGGAGGTGCACAGTGGGGTCAGCACAGACCCGCAGCCCCTCAAGGAGCAG

PALNDSRYCLSSRLRVSATFCCCGCCCTCAATGACTCCAGATACTGCCTGAGCAGCCGCCTGAGGGTCTCGGCCACCTTC

W Q N P R N H F R C Q V Q F Y G L S E N TGGCAGAACCCCCGCAACCACTTCCGCTGTCAAGTCCAGTTCTACGGGCTCTCGGAGAAT

D E W T Q D R A K P V T Q I V S A E A W GACGAGTGGACCCAGGATAGGGCCAAACCTGTCACCCAGATCGTCAGCGCCGAGGCCTGG

<TCR beta <u>linker</u> c-fos>

G R A D P G G L T D T L Q A E T D Q L E GGTAGAGCAGACCCCGGGGGTCTGACTGATACACTCCAAGCGGAGACAGATCAACTTGAA

D K K S A L Q T E I A N L L K E K E K L GACAAGAAGTCTGCGTTGCAGACCGAGATTGCCAATCTACTGAAAGAGAAGGAAAAACTA

E F I L A A Y \*
GAGTTCATCCTGGCAGCTTACTAG

TCR alfa>

M N Y S P A L V T V M L F V F G R T H G ATGAACTATTCTCCAGCTTTAGTGACTGTGATGCTGTTTGTGTTTGGGAGGACCCATGGA

D S V T Q M Q G Q V T L S E D D F L F I GACTCAGTAACCCAGATGCAAGGTCAAGTGACCCTCTCAGAAGACGACTTCCTATTTATA

N C T Y S T T W Y P T L F W Y V Q Y P G AACTGTACTTATTCAACCACATGGTACCCGACTCTTTTCTGGTATGTCCAATATCCTGGA

F E A T Y D K G T T S F H L Q K A S V Q TTTGAAGCTACATATGATAAAGGAACAACGTCCTTCCACTTGCAGAAAGCCTCAGTGCAG

E S D S A V Y Y C V L G D R Q G G R A L GAGTCAGACTCTGCTGTGTGCTGTGTGTGTGTGTGTGACAGGGAGGCAGAGCTCTG

I F G T G T T V S V S P N I Q N P E P A ATATTTGGAACAGGAACCAGGTATCAGTCAGCCCCAACATCCAGAACCCAGAACCTGCT

V Y Q L K D P R S Q D S T L C L F T D F GTGTACCAGTTAAAAGATCCTCGGTCTCAGGACAGCACCCTCTGCCTGTTCACCGACTTT

D S Q I N V P K T M E S G T F I T D K T GACTCCCAAATCAATGTGCCGAAAACCATGGAATCTGGAACGTTCATCACTGACAAAACT

V L D M K A M D S K S N G A I A W S N Q GTGCTGGACATGAAAGCTATGGATTCCAAGAGCAATGGGGCCCATTGCCTGGAGCAACCAG

T S F T C Q D I S K E T N A T Y P S S D ACAAGCTTCACCTGCCAAGATATCTCCAAAGAGACCAACGCCACCTACCCCAGTTCAGAC

<TCR alfa <u>linker</u> c-jun>

V P G G R I A R L E E K V K T L K A Q N GTTcccgggGGTAGAATCGCCCGGCTGGAGGAAAAAGTGAAAACCTTGAAAGCTCAGAAC

S E L A S T A N M L R E Q V A Q L K Q K
TCGGAGCTGGCGTCCACGGCCAACATGCTCAGGGAACAGGTGGCACAGCTTAAACAGAAA

V M N Y \*
GTCATGAACTACTAG

TCR beta> M K A G V T O T P R Y L I K T I

M K A G V T Q T P R Y L I K T R G Q Q V ATGAAAGCTGGAGTTACTCAAACTCCAAGATATCTGATCAAAACGAGAGGACAGCAAGTG

T L S C S P I S G H R S V S W Y Q Q T P ACACTGAGCTCCCCTATCTCTGGGCATAGGAGTGTATCCTGGTACCAACAGACCCCA

G Q G L Q F L F E Y F S E T Q R N K G N GGACAGGGCCTTCAGTTCCTCTTTGAATACTTCAGTGAGACACAGAGAAACAAAGGAAAC

F P G R F S G R Q F S N S R S E M N V S TTCCCTGGTCGATTCTCAGGGCGCCAGTTCTCTAACTCTCGCTCTGAGATGAATGTGAGC

T L E L G D S A L Y L C A S S F D S G N

ACCTTGGAGCTGGGGGACTCGGCCCTTTATCTTTGCGCCAGCAGCTTCGACAGCGGGAAT

S P L H F G N G T R L T V T E D L N K V TCACCCCTCCACTTTGGGAACGGGACCAGGCTCACTGTGACAGGGACCTGAACAAGGTG

F P P E V A V F E P S E A E I S H T Q K TTCCCACCCGAGGTCGTCTTTGAGCCATCAGAAGCAGAGATCTCCCACACCCAAAAG

A T L V C L A T G F F P D H V E L S W W GCCACACTGGTGGCCCACACGGCTTCTTCCCTGACCACGTGGAGCTGAGCTGGTGG

V N G K E V H S G V S Q D P Q P L K E Q GTGAATGGGAAGGAGGTGCACAGTCAGCTCAGGACCCGCAGCCCCTCAAGGAGCAG

P A L N D S R Y S L S S R L R V S A T F

 $\tt CCCGCCCTCAATGACTCCAGATACAGCCTGAGCAGCCGCCTGAGGGTCTCGGCCACCTTC$ 

W Q N P R N H F R C Q V Q F Y G L S E N TGGCAGAACCCCGCAACCACTTCCGCTGTCAAGTCCAGTTCTACGGGCTCTCGGAGAAT

D E W T Q D R A K P V T Q I V S A E A W GACGAGTGGACCCAGATAGGGCCAAACCTGTCACCCAGATCGTCAGCGCCGAGGCCTGG

<TCR beta <u>linker</u> c-fos>

G R A D P G G L T D T L Q A E T D Q L E GGTAGAGCAGACCCCGGGGGTCTGACTGATACACTCCAAGCGGAGACAGATCAACTTGAA

E F I L A A Y \*
GAGTTCATCCTGGCAGCTTACTAG

TCR alfa>

M K Q E V T Q I P A A L S V P E G E N L ATGAAACAAGAAGTTACACAGATTCCTGCAGCTCTGAGTGTCCCAGAAGGAGAAAACTTG

V L N C S F T D S A I Y N L Q W F R Q D GTTCTCAACTGCAGTTTCACTGATAGCGCTATTTACAACCTCCAGTGTTTAGGCAGGAC

G R L N A S L D K S S G R S T L Y I A A GGAAGACTTAATGCCTCGCTGGATAAATCATCAGGACGTAGTACTTTATACATTGCAGCT

S Q P G D S A T Y L C A V T N F N K F Y TCTCAGCCTGGTGACTCAGCCACCTACCTCTGTGCTGACCAACTTCAACAAATTTAC

F G S G T K L N V K P N I Q N P D P A V TTTGGATCTGGGACCAAACTCAATGTAAAACCAAATATCCAGAACCCTGACCCTGCCGTG

S Q T N V S Q S K D S D V Y I T D K T V TCTCAAACAAATGTGTCACAAAGTAAGGATTCTGATGTGTATATCACAGACAAAACTGTG

L D M R S M D F K S N S A V A W S N K S CTAGACATGAGGTCTATGGACTTCAAGAGCAACAGTGCTGTGGCCTGGAGCAACAAATCT

D F A C A N A F N N S I I P E D T F F P GACTTTGCATGTGCAAACGCCTTCAACAACAGCATTATTCCAGAAGACACCTTCTTCCCC

<TCR alfa <u>linker</u> c-jun>

S P E S S P G G R I A R L E E K V K T L AGCCCAGAAAGTTCCcccgggGGTAGAATCGCCCGGCTGGAGAAAAGTGAAAACCTTG

K A Q N S E L A S T A N M L R E Q V A Q AAAGCTCAGAACTCGGAGCTGGCGTCCACGGCCAACATGCTCAGGGAACAGGTGGCACAG

L K Q K V M N Y \*
CTTAAACAGAAAGTCATGAACTACTAG

TCR beta>

- M K A G V T Q T P R Y L I K T R G Q Q V ATGAAAGCTGGAGTTACTCAAACTCCAAGATATCTGATCAAAACGAGAGGACAGCAAGTG
- T L S C S P I S G H R S V S W Y Q Q T P ACACTGAGCTGCTCCCCTATCTCTGGGCATAGGAGTGTATCCTGGTACCAACAGACCCCA
- G Q G L Q F L F E Y F S E T Q R N K G N GGACAGGGCCTTCAGTTCCTCTTTGAATACTTCAGTGAGACACAGAGAAACAAAGGAAAC
- F P G R F S G R Q F S N S R S E M N V S TTCCCTGGTCGATTCTCAGGGGGGCGCCAGTTCTCTAACTCTCGCTCTGAGATGAATGTGAGC
- T L E L G D S A L Y L C A S S F D S G N ACCTTGGGGGGGCTCGGCCCTTTATCTTTGCGCCAGCAGCTTCGACAGCGGGAAT
- S P L H F G N G T R L T V T E D L N K V TCACCCCTCCACTTTGGGAACGGGACCAGGCTCACTGTGACAGAGGACCTGAACAAGGTG
- F P P E V A V F E P S E A E I S H T Q K
  TTCCCACCGAGGTCGCTGTGTTTGAGCCATCAGAAGCAGAGATCTCCCACACCCAAAAG
- A T L V C L A T G F F P D H V E L S W W GCCACACTGGTGGCCACAGGCTTCTTCCCTGACCACGTGGAGCTGGTGG
- V N G K E V H S G V S Q D P Q P L K E Q GTGAATGGGAAGGAGGTGCACAGTGGGGTCAGCCAGGACCCGCAGCCCCTCAAGGAGCAG
- PALNDSRYSLSSRLRVSATFCCCGCCTCAATGACTCCAGATACAGCCTGAGCAGCCGCCTGAGGGTCTCGGCCACCTTC
- W Q N P R N H F R C Q V Q F Y G L S E N TGGCAGAACCCCGGCAACCACTTCCGCTGTCAAGTCCAGTTCTACGGGCTCTCGGAGAAT
- D E W T Q D R A K P V T Q I V S A E A W GACGAGTGGACCCAGGTAGGGCCAAACCTGTCACCCAGATCGTCAGCGCCGAGGCCTGG

<TCR beta <u>linker</u> c-fos>

- G R A D P G G L T D T L Q A E T D Q L E GGTAGAGCAGACCCGGGGGTCTGACTGATACACTCCAAGCGGAGACAGATCAACTTGAA
- D K K S A L Q T E I A N L L K E K E K L GACAAGAAGTCTGCGTTGCAGACCGAGATTGCCAATCTACTGAAAGAGAAGAAAAACTA
- E F I L A A Y \*
  GAGTTCATCCTGGCAGCTTACTAG

TCR alfa>

M Q K E V E Q N S G P L S V P E G A I A atgcagaaggaaggaaggaaggaccattgcc

S L N C T Y S D R G S Q S F F W Y R Q Y TCTCTCAACTGCACTTACAGTCACCAGTCCCTTCTTCTCGTACAGACAATAT

Q P S D S A T Y L C A V T T D S W G K L CAGCCCAGTGATTCAGCCACCTACCTCTGTGCCGTTACAACTGACAGCTGCGCGGAAATTG

Q F G A G T Q V V V T P D I Q N P D P A CAGITICAGCAGCAGCITGICGICACCCAGATATICAGAACCCTGACCCTGCC

V Y Q L R D S K S S D K S V C L F T D F GIGHACCACCICACACCICTAAATCCAGICACAAGICTGICTGCCTATTCACCCATTIT

D S Q T N V S Q S K D S D V Y I T D K T CATTCTCAAACAAATGTCACAAAGTAACCATTCTCAATGTCATCTCAAAAAACAAAACCAAAAACT

<TCR alfa linker c-jun>

PSPESSPGGRIARLEEKVKT

L K A Q N S E L A S T A N M L R E Q V A TIGAAAGCICAGAACAGCIGGGGGICCACGGCCAACATGCICAGGGGAACAGGIGGCA

Q L K Q K V M N Y \*
CACCITAAACACAAAGICAICAACIACIAG

TCR beta>

SAAPSQTSVYFCASRPGLAG

E N D E W T Q D R A K P V T Q I V S A E CACAATCACCACATCGTCACCCCACATCGTCACCCCCACA

<TCR beta linker c-fos>

A W G R A D P G G L T D T L Q A E T D Q GCCTGGGGTAGAGGGGAGACGCGgggGGTCTGACTGATACACTCCAAGGGGAGACACACACACA

Continued .....

21/52

Figure 17 (continued)

L E D K K S A L Q T E I A N L L K E K E CTICAACACAAGAGICIGOGTIGCAGACCACAATTGCCAATCTACTGAAAGAGAAGCAA

K L E F I L A A Y G S G G G L N D I F E AAACTACAGTCATCCTGCCACCTTACGGATCCTGCCACCTTACGGATCATCTTTTCAA

A Q K I E W H \*
GCTCAGAAAATCGAATGCCATTAAGCTT

TCR alfa>

M Q Q K N D D Q Q V K Q N S P S L S V Q atgCAACAGAGAATCACCAGCAGCAGTTAAGCAAAATTCACCATCCCTGAGCGTCCAG

EGRISILNCDYTNSMFDYFL

W Y K K Y P A E G P T F L I S I S S I K
TOGTACAAAAAATACCCTGCTGAAGGTCCTACATTCCTGATATCTATAAGTTCCATTAAG

D K N E D G R F T V F L N K S A K H L S CATAAAAATGAACATGCAAGCACCTCTCT

L H I V P S Q P G D S A V Y F C A A M E CIGCACATIGIGCCCICCCAGCCIGCAGCACTCIGCAGCIGITACTICIGIGCAGCAATIGGAG

G A Q K L V F G Q G T R L T I N P N I Q GGACCCCAGAACCIGGIATITOGCCAAGCAACCAGCCIGACIATCAACCCAAATATCCAG

N P D P A V Y Q L R D S K S S D K S V C AACCCTGACCCTGCCGTGTCACCCTGCACCACGTGACCACGTGACCACGTGACCACGTGTCTCTCCC

L F T D F D S Q T N V S Q S K D S D V Y CTATICACCCATTTICATICICAAACAAATGIGICACAAAGIAACGATTCTCATGIGIAT

I T D K T V L D M R S M D F K S N S A V ATCACAGACAAAACTGTGCTAGACATGAGGTCTATGGACTTCAAGAGCAACAGTGCTGTG

A W S N K S D F A C A N A F N N S I I P GCCTGCAGCAACAACTCTGCATTTTCCATGTGCCAAACCCCTTCAACAACAGCATTATTCCA

<TCR alfa linker c-jun>

E D T F F P S P E S S P G G R I A R L E GAAGACACCTTCTTCCCCAGCCCAGAAGTTCCCccgggGGTAGAATCGCCCGGCTGGAG

E K V K T L K A Q N S E L A S T A N M L
CAAAAAGTGAAAACCTTGAAAGCTCAGAACTCCGGAGCTCGCGGTCCACCGCCCAACATCCTC

R E Q V A Q L K Q K V M N Y \*
ACCCAACACCICCACCACCTTAAACACAAACICATCCAACTACTAC

TCR beta>

T L Q C A Q D M N H E Y M S W Y R Q D P ACACTOCAGTGTOCCCAGGATATGAACCATGAATACATGTCCTGGTATCGACAACACCCA

V P N G Y N V S R S T T E D F P L R L L GICCCCAATGGCTACAATGICTCCAGATCAACCACAGAGGATTTCCCCCTCAGGCTGCTG

V F P P E V A V F E P S E A E I S H T Q GIGITOCCACCOCAGGICGCIGIGITTCAGCCATCAGAACCAGAGTCTCCCACACCCAA

KATLVCLATGFYPDHVELSW AAGGCCACACIGGIGIGCCIGGCCACACGCICGACCIGGACCIGG

W V N G K E V H S G V S T D P Q P L K E
TGGGTGAATGGGAAGGAGGTGCACAGTGGGGTCAGCAGACCCCTCAAGGAG

FWQDPRNHFRCQVQFYGLSE TTCTCCCACGACCCCCAACCACTTCCCCCTGTCAAGTCCACGTTCTACCCCCTCTCCCAG

N D E W T Q D R A K P V T Q I V S A E A
AATGAGGAGTGGACCCAGATAGGCCCAAACCCGTCACCCAGATCGTCAGCGCCGAGGCC

Continued.....

Figure 19 (continued)

<TCR beta linker c-fos>
W G R A D P G G L T D T L Q A E T D Q L
TGGGGTAGAGCAGACCCCgggGGTCTGACTGATACACTCCAAGCCGAGACACACTCAACTT

E D K K S A L Q T E I A N L L K E K E K GAAGACAAGAAGICIGCGITGCAGACCCAGATTGCCCAATCTACTGAAAGACAAGAAAAA

<u>linker</u> Biotinylation tag>
L E F I L A A Y G S G G L N D I F E A
CTACAGGTCATCCTGCCACCTTACggatccGGTGGTCGTCTGAACGATATTTTTGAAGCT

Q K I E W H \*
CACAAAATCCAATCCCATTAACCTT

T L Q C A Q D M N H E Y M S W Y R Q D P ACACTICAGUIGUCCAGGATATICAACCATCAATACAGTCCTGGTATCGACACCACA

T F W Q  $\mathbf{p}$  P R N H F R C Q V Q F Y G L S ACCTICIGGCAGGACCCCCCAACCACCTICCGCTGTCAAGTCCAGTTCTACGGGCTCTCG

ENDEWTQDRAKPVTQIVSAE

Continued.....

Figure 20 (continued)

<TCR beta linker c-fos>
A W G R A D P G G L T D T L Q A E T D Q
GCCIGGGTAGACCAGACCCCgggGGTCTGACTGATACACTCCAAGCGGAGACAGATCAA

L E D K K S A L Q T E I A N L L K E K E CTTGAAGACAAGTCTGCGGTTGCAGACGAACTTGCCAATCTACTGAAAGAGAAGGAA

linker Biotinylation tag>
K L E F I L A A Y G S G G G L N D I F E
AAACTACAGTICATOCTOGCAGCTTACggatccGGTGGTGGTCGTAACGATATTTTTGAA

A Q K I E W H \*
GCTCAGAAAATCGAATGCCATTAAGCTT

Linker<-> fos

P G G L T D T L Q A E T D Q 5'- <u>ccc gog</u> GGT CTG ACT GAT ACA CTC CAA GCG GAG ACA GAT CAA Xma I

L E D K K S A L Q T E I A N L CIT GAA GAC AAG AAG TCT GCG TIG CAG ACC GAG ATT GCC AAT CIA

<-lin
L K E K E K L E F I L A A Y G
CTG AAA GAG AAG GAA AAA CTA GAG TTC ATC CTG GCA GCT TAC gga
Bam</pre>

Ker-> <- biotinylation tag
S G G L N D I F E A Q K I E
tcc GGT GGT GGT CTG AAC GAT ATT TIT GAA GCT CAG AAA ATC GAA
HI

W H \*
TGG CAT <u>TAA GCT T</u> -3'
Hind III

Α

Reverse primer:

5'-ACACAC GGA TCC GIA AGC TGC GAC GAT GAA CTC GAT TIT CTT-3'

Bam HI

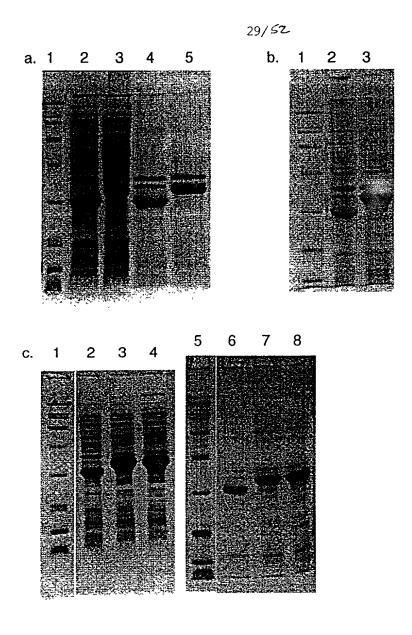


Figure 23



Figure 25.

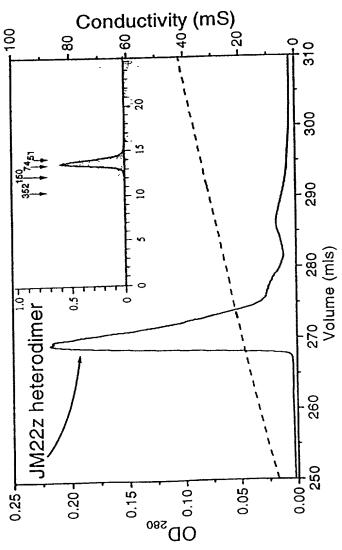
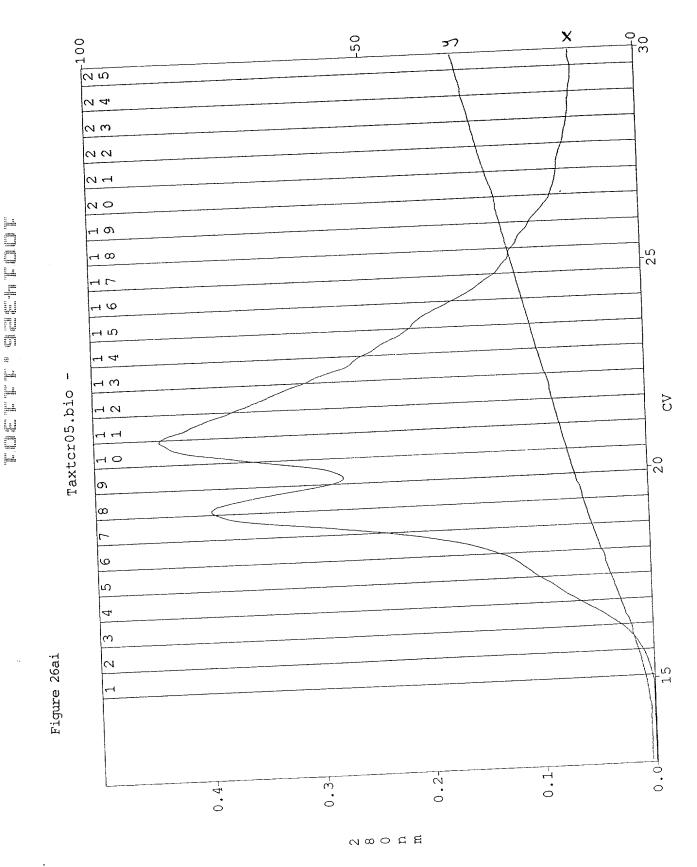
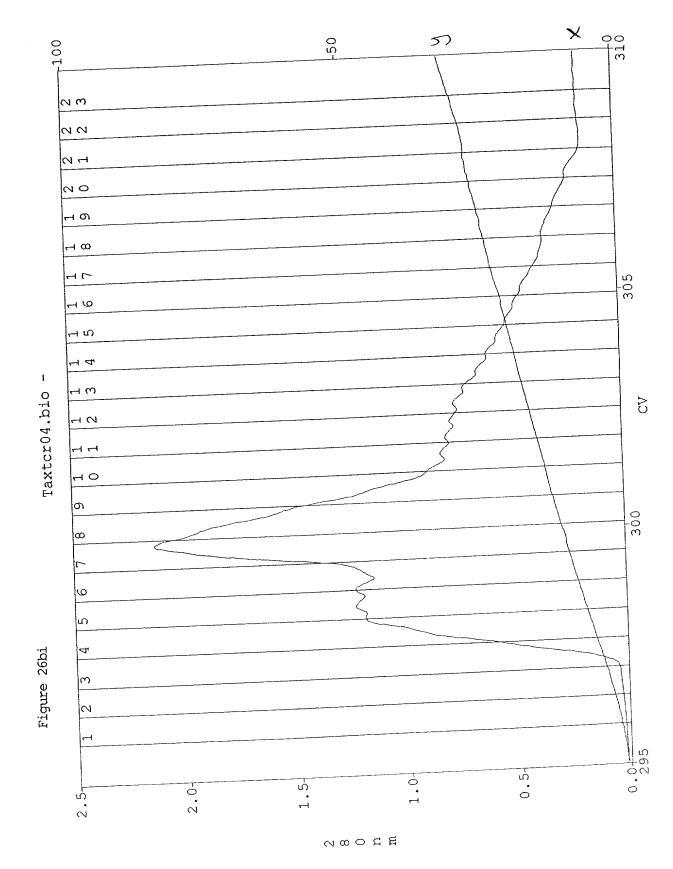


Figure 24.





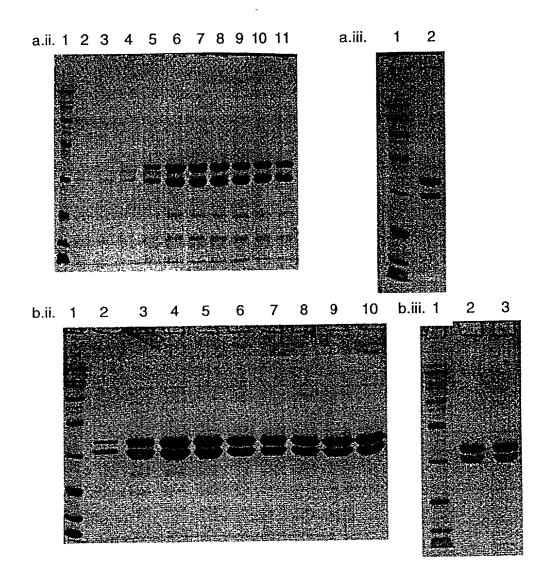
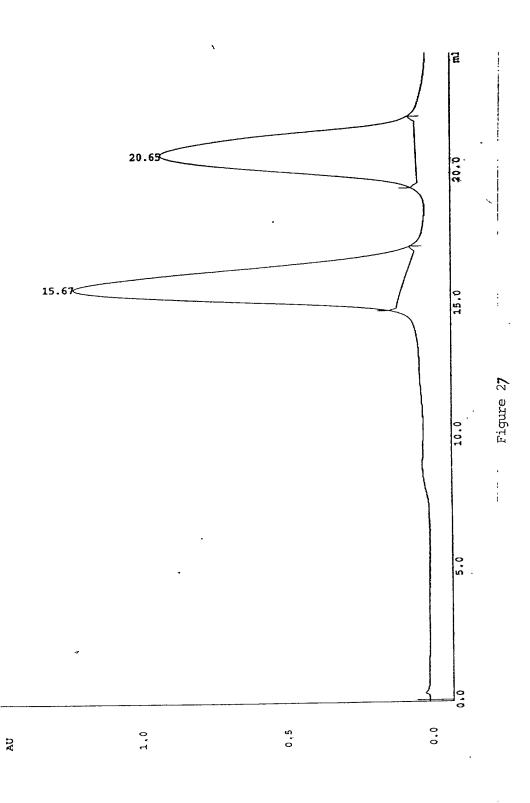


Figure 26



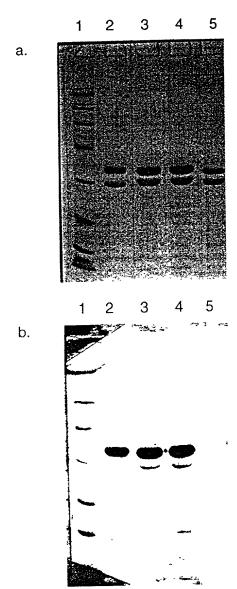


Figure 28

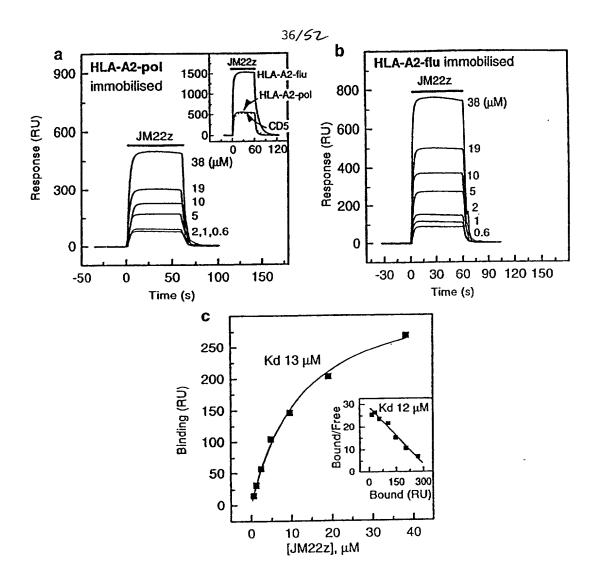


Figure 29

Figure 30

jon02b Fc=1 - 1

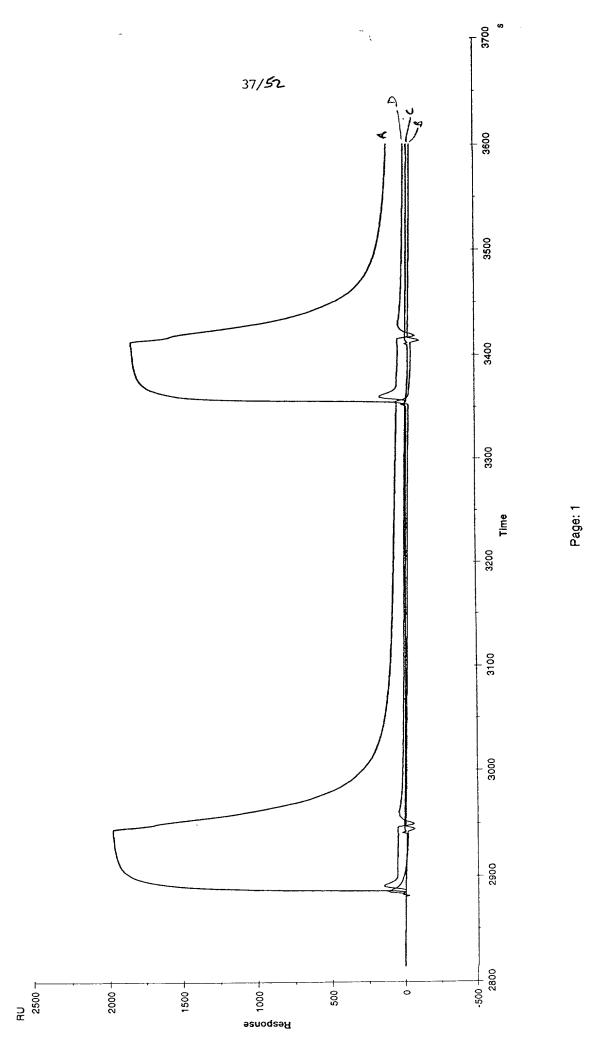
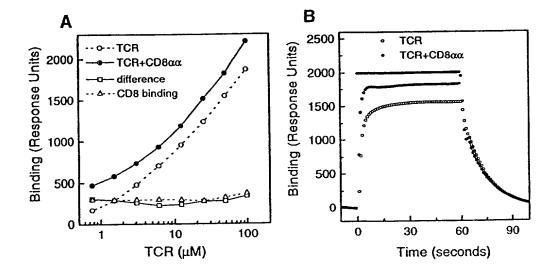


Figure 31



### FIGURE 32

TCR alfa>

M Q L L E Q S P Q F L S I Q E G E N L T
ATGCAaCTaCTaGAaCAaAGtCCTCAGTTTCTAAGCATCCAAGAGGGAGAAAATCTCACT

V Y C N S S S V F S S L Q W Y R Q E P G GTGTACTGCAACTCCTCAAGTGTTTTTTCCAGCTTACAATGGTACAGAACAGGAGCCTGGG

E G P V L L V T V V T G G E V K K L K R GAAGGTCCTGTCCTCGTGACAGTAGTTACGGGTGGAGAAGTGAAGAAGCTGAAGAAGA

L T F Q F G D A R K D S S L H I T A A Q CTAACCTTCAGTTTGGTGATGCAAGAAAGGACAGTTCTCCCACATCACTGCGGCCCAG

P G D T G L Y L C A G A G S Q G N L I F CCTGGTGATACAGGCCTCTACCTCTGTGCAGGAGGCGGAAGCCAAGGAAATCTCATCTTT

G K G T K L S V K P N I Q N P D P A V Y GGAAAAGGCACTAAACTCTCTGTTAAACCAAATATCCAGAACCCTGACCCTGCCGTGTAC

Q T N V S Q S K D S D V Y I T D K T V L CAAACAAATGTGTCACAAAGTAAGGATTCTGATGTGTATATCACAGACAAAACTGTGCTA

D M R S M D F K S N S A V A W S N K S D GACATGAGGTCTATGGACTTCAAGAGCAACAGTGCTGTGGCCTGGAGCAACAAATCTGAC

F A C A N A F N N S I I P E D T F F P S
TTTGCATGTGCAAACGCCTTCAACAACAGCATTATTCCAGAAGACACCTTCTTCCCCAGC

<TCR alfa linker c-jun>

P E S S P G G R I A R L E E K V K T L K CCAGAAAGTTCCcccgggGGTAGAATCGCCCGGCTGGAGGAAAAAGTGAAAACCTTGAAA

A Q N S E L A S T A N M L R E Q V A Q L GCTCAGAACTCGGAGCTGGCGTCCACGGCCAACATGCTCAGGGAACAGGTGGCACAGCTT

K Q K V M N Y \*
AAACAGAAAGTCATGAACTACTAG

#### FIGURE 33

TCR beta>

V T L S C E Q N L N H D A M Y W Y R Q D GTGACCCTGAGTTGTGAACAGAATTTGAACCACGATGCCATGTACTGGTACCGACAGGAC

D I A E G Y S V S R E K K E S F P L T V
GATATAGCTGAAGGGTACAGCGTCTCTCGGGAGAAGAAGAAGAATCCTTTCCTCTCACTGTG

T S A Q K N P T A F Y L C A S S S R S S ACATCGGCCCAAAAGAACCCGACAGCTTTCTATCTCTGTGCCAGTAGTTCGAGGAGCTCC

Y E Q Y F G P G T R L T V T E D L K N V TACGAGCAGTACTTCGGGCCGGCACCAGGCTCACGGTCACAGAGGACCTGAAAAACGTT

F P P E V A V F E P S E A E I S H T Q K
TTCCCACCCGAGGTCGCTGTTTTGAACCATCAGAAGCAGAGATCTCCCACACCCAAAAG

A T L V C L A T G F Y P D H V E L S W W GCCACACTGGTGTGCCTGGCCACAGGCTTCTACCCCGACCACGTGGAGCTGAGCTGGTGG

V N G K E V H S G V S T D P Q P L K E Q GTGAATGGGAAGGAGGTGCACAGTGGGGTCAGCACAGACCCGCAGCCCCTCAAGGAGCAG

P A L N D S R Y  $\underline{\mathbf{s}}$  L S S R L R V S A T F CCCGCCCTCAATGACTCCAGATACTCCCTGAGCAGCCGCCTGAGGGGTCTCGGCCACCTTC

W Q N P R N H F R C Q V Q F Y G L S E N
TGGCAGAACCCCCGCAACCACTTCCGCTGTCAAGTCCAGTTCTACGGGCTCTCGGAGAAT

D E W T Q D R A K P V T Q I V S A E A W GACGAGTGGACCCAGGATAGGGCCAAACCTGTCACCCAGATCGTCAGCGCCGAGGCCTGG <TCR beta  $\underline{linker}$  c-fos>

G R A D P G G L T D T L Q A E T D Q L E GGTAGAGCAGACCCCGGGGGGCTCTGACTGATACACCTCCAAGCGGAGACAGATCAACTTGAA

D K K S A L Q T E I A N L L K E K E K L GACAAGAAGTCTGCGTTGCAGACCGAGATTGCCAATCTACTGAAAGAGAAAAAACTA

E F I L A A Y \*
GAGTTCATCCTGGCAGCTTACTAG

### FIGURE 34

TCR beta>

V T L S C E Q N L N H D A M Y W Y R Q D GTGACCCTGAGTTGTGAACAGAATTTGAACCACGATGCCATGTACTGGTACCGACAGGAC

D I A E G Y S V S R E K K E S F P L T V
GATATAGCTGAAGGGTACAGCGTCTCCGGGAGAAGAAGGAATCCTTTCCTCTCACTGTG

T S A Q K N P T A F Y L C A S S S R S S ACATCGGCCCAAAAGAACCCGACAGCTTTCTATCTCTGTGCCAGTAGTTCGAGGAGCTCC

F P P E V A V F E P S E A E I S H T Q K
TTCCCACCCGAGGTCGCTGTGTTTGAACCATCAGAAGCAGAGATCTCCCACACCCAAAAG

A T L V C L A T G F Y P D H V E L S W W GCCACACTGGTGTGCCTGGCCACAGGCTTCTACCCCGACCACGTGGAGCTGAGCTGGTGG

V N G K E V H S G V S T D P Q P L K E Q GTGAATGGGAAGGAGGTGCACAGTGGGGTCAGCACAGACCCGCAGCCCCTCAAGGAGCAG

P A L N D S R Y S L S S R L R V S A T F CCCGCCCTCAATGACTCCAGATACTCCCTGAGCAGCCGCCTGAGGGTCTCGGCCACCTTC

W Q N P R N H F R C Q V Q F Y G L S E N
TGGCAGAACCCCGGCAACCACTTCCGCTGTCAAGTCCAGTTCTACGGGCTCTCGGAGAAT

D E W T Q D R A K P V T Q I V S A E A W GACGAGTGGACCCAGGATAGGGCCAAACCTGTCACCCAGATCGTCAGCGCCGAGGCCTGG

<TCR beta <pre>linker c-fos>

G R A D P G G L T D T L Q A E T D Q L E GGTAGAGCAGACcccgggGGTCTGACTGATACACTCCAAGCGGAGACAGATCAACTTGAA

D K K S A L Q T E I A N L L K E K E K L GACAAGAAGTCTGCGTTGCAGACCGAGATTGCCAATCTACTGAAAGAGAAAAACTA

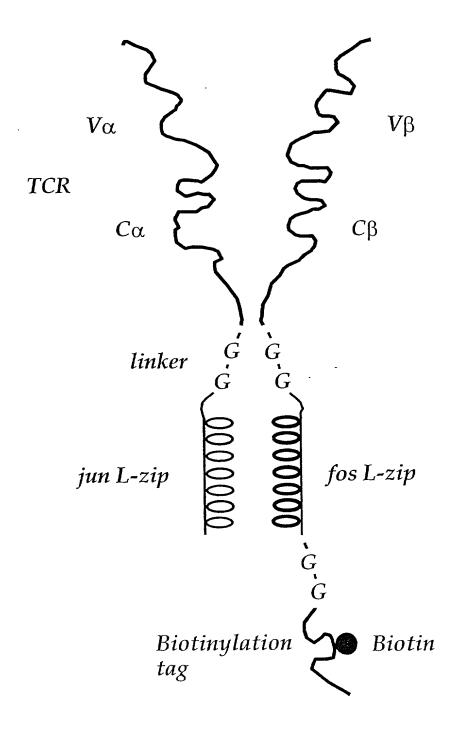
linker Biotinylation tag>

E F I L A A Y G S G G G L N D I F E A Q GAGTTCATCCTGGCAGCTTACggatccGGTGGTGGTCTGAACGATATTTTTGAAGCTCAG

K I E W H \*
AAAATCGAATGGCATTAA

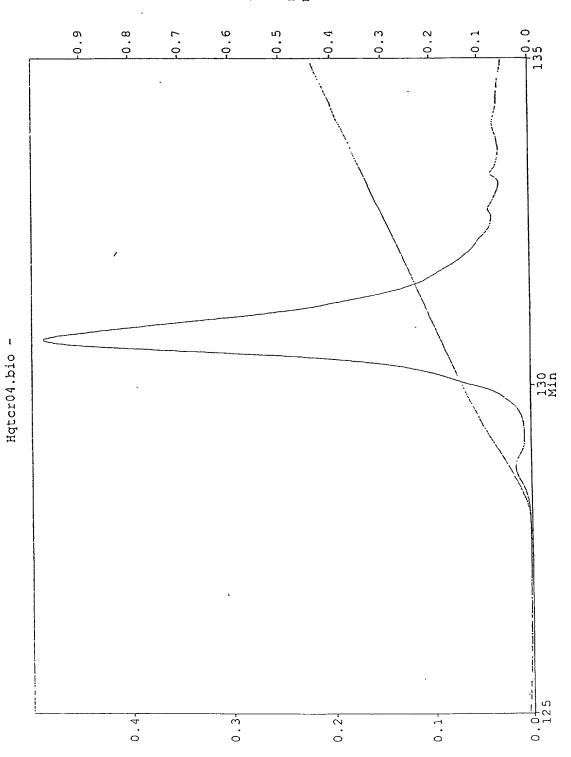
44152

# FIGURE 35



45|52 FIGURE *3*6





0 0 0 C E

46152 FIGURE 37 ml 21.60 — tcrbio01\_M1\_UV\_280nm\_01@A, BASE 15.0 15.04 cerpicul\_M1\_UV\_280nn\_01 1.0 F.U . . 0·0

#### FIGURE 38

- S L N C T Y S D R G S Q S F F W Y R Q Y TCTCTCAACTGCACTTACAGTGACCGAGGTTCCCAGTCCTTCTTCTGGTACAGACAATAT
- S G K S P E L I M S I Y S N G D K E D G TCTGGGAAAAGCCCTGAGTTGATAATGTCCATATACTCCAATGGTGACAAAGAAGATGGA
- R F T A Q L N K A S Q Y V S L L I R D S AGGTTTACAGCACAGCTCAATAAAGCCAGCCAGTATGTTTCTCTGCTCATCAGAGACTCC
- Q P S D S A T Y L C A V T T D S W G K L CAGCCCAGTGATTCAGCCACCTACCTCTGTGCCGTTACAACTGACAGCTGGGGGAAATTG
- Q F G A G T Q V V V T P D I Q N P D P A CAGTTTGGAGCAGGGACCCAGGTTGTGGTCACCCCAGATATCCAGAACCCTGACCCTGCC
- D S Q T N V S Q S K D S D V Y I T D K T GATTCTCAAACAAATGTGTCACAAAGTAAGGATTCTGATGTGTATATCACAGACAAAACT
- V L D M R S M D F K S N S A V A W S N K GTGCTAGACATGAGGTCTATGGACTTCAAGAGCAACAGTGCTGTGGCCTGGAGCAACAAA
- S D F A C A N A F N N S I I P E D T F F TCTGACTTTGCATGTGCAAACGCCTTCAACAACAGCATTATTCCAGAAGACACCTTCTTC
- L K A Q N S E L A S T A N M L R E Q V A TTGAAAGCTCAGAACTCGGAGCTGGCGTCCACGGCCAACATGCTCAGGGAACAGGTGGCA
- Q L K Q K V M N Y \*
  CAGCTTAAACAGAAAGTCATGAACTACTAG

#### FIGURE 39

- TCR beta>
  M N A G V T Q T P K F Q V L K T G Q S M
  atgaacgctggtgtcactcagaccccaaaattccaggtcctgaagacaggacaggacatg
- T L Q C A Q D M N H E Y M S W Y R Q D P ACACTGCAGTGTGCCCAGGATATGAACCATGAATACATGTCCTGGTATCGACAAGACCCA
- G M G L R L I H Y S V G A G I T D Q G E GGCATGGGGCTGAGGCTGATTCATTACTCAGTTGGTGCTGGTATCACTGACCAAGGAGAA
- $\begin{array}{cccccc} V & P & N & G & Y & N & V & S & R & S & T & T & E & D & F & P & L & R & L & L \\ \textbf{GTCCCCAATGGCTACAATGTCTCCAGATCAACCACAGAGGATTTCCCGGTCAGGCTGCTG} \\ \end{array}$
- S A A P S Q T S V Y F C A S R P G L A G TCGGCTGCTCCCCAGACATCTGTGTACTTCTGTGCCAGCAGGCCGGGACTAGCGGGA
- G R P E Q Y F G P G T R L T V T E D L K GGGCGACCAGAGCAGTACTTCGGGCCGGGCACCAGGCTCACAGAGGACCTGAAA
- N V F P P E V A V F E P S E A E I S H T AACGTGTTCCCACCGAGGTCGCTGTGTTTGAGCCATCAGAAGCAGAGATCTCCCACACC
- Q K A T L V C L A T G F Y P D H V E L S CAAAAGGCCACACTGGTGTGCCTGGCCACAGGCTTCTACCCCGACCACGTGGAGCTGAGC
- W W V N G K E V H S G V S T D P Q P L K TGGTGGGTGAATGGGAAGGAGGTGCACAGTGGGGTCAGCACAGACCCGCAGCCCCTCAAG
- E Q P A L N D S R Y  $\underline{\mathbf{A}}$  L S S R L R V S A GAGCAGCCCGCCTCAATGACTCCAGATACgetCTGAGCAGCCGCCTGAGGGTCTCGGCC
- T F W Q N P R N H F R C Q V Q F Y G L S ACCTTCTGGCAGAACCCCCGCAACCACTTCCGCTGTCAAGTCCAGTTCTACGGGCTCTCG
- E N D E W T Q D R A K P V T Q I V S A E GAGAATGACGAGTGGACCCAGGATAGGGCCAAACCTGTCACCCAGATCGTCAGCGCCGAG

L E D K K S A L Q T E I A N L L K E K E CTTGAAGACAAGAAGTCTGCGTTGCAGACCGAGATTGCCAATCTACTGAAAGAGAAGGAA

<u>linker</u> Biotinylation tag>
K L E F I L A A Y G S G G L N D I F E
AAACTAGAGTTCATCCTGGCAGCTTACggatccGGTGGTGGTCTGAACGATATTTTTGAA

A Q K I E W H \*
GCTCAGAAAATCGAATGGCATTAAGCTT

# FIGURE 40

TCR alfa>
M Q Q K N D D Q Q V K Q N S P S L S V Q
atgCAACAGAAGATGATGACCAGCAAGTTAAGCAAAATTCACCATCCCTGAGCGTCCAG

E G R I S I L N C D Y T N S M F D Y F L GAAGGAAGAATTTCTATTCTGAACTGTGACTATACTAACAGCATGTTTGATTATTTCCTA

W Y K K Y P A E G P T F L I S I S S I K TGGTACAAAAAATACCCTGCTGAAGGTCCTACATTCCTGATATCTATAAGTTCCATTAAG

D K N E D G R F T V F L N K S A K H L S GATAAAAATGAAGATGGAAGATTCACTGTCTTCTTAAACAAAAGTGCCAAGCACCTCTCT

L H I V P S Q P G D S A V Y F C A A M E CTGCACATTGTGCCCTCCCAGCCTGGAGACTCTGCAGTGTACTTCTGTGCAGCAATGGAG

 ${\tt G}$  A Q K L V F G Q G T R L T I N P N I Q GGAGCCCAGAAGCTGGTATTTGGCCAAGGAACCAGGCTGACTATCAACCCAAATATCCAG

L F T D F D S Q T N V S Q S K D S D V Y CTATTCACCGATTTTGATTCTCAAACAAATGTGTCACAAAGTAAGGATTCTGATGTGTAT

I T D K T V L D M R S M D F K S N S A V ATCACAGACAAAACTGTGCTAGACATGAGGTCTATGGACTTCAAGAGCAACAGTGCTGTG

A W S N K S D F A C A N A F N N S I I P GCCTGGAGCAACAATCTGACTTTGCATGTGCAAACGCCTTCAACAACAGCATTATTCCA

 $$\sf TCR$$  alfa  ${\tt linker}$  c-jun> E D T F F P S P E S S P G G R I A R L E GAAGACACCTTCTCCCCAGCCCAGAAAGTTCCcccgggGGTAGAATCGCCCGGCTGGAG

E K V K T L K A Q N S E L A S T A N M L GAAAAAGTGAAAACCTTGAAAGCTCAGAACTCGGAGCTGGCGTCCACGGCCAACATGCTC

R E Q V A Q L K Q K V M N Y \*
AGGGAACAGGTGGCACAGCTTAAACAGAAAGTCATGAACTACTAG

And the second s

## FIGURE 4

T L Q C A Q D M N H E Y M S W Y R Q D P ACACTGCAGTGTGCCCAGGATATGAACCATGAATACATGTCCTGGTATCGACAAGACCCA

V P N G Y N V S R S T T E D F P L R L L GTCCCCAATGGCTACAATGTCTCCAGATCAACCACAGAGGATTTCCCGCTCAGGCTGCTG

S A A P S Q T S V Y F C A S S Y P G G G TCGGCTGCTCCCCAGACATCTGTGTACTTCTGTGCCAGCAGTTACCaGGaGGGGGGG

F Y E Q Y F G P G T R L T V T E D L K N TTTTACGAGCAGTACTTCGGGCCGGGCACCAGGCTCACGGTCACAGAGGACCTGAAAAAC

K A T L V C L A T G F Y P D H V E L S W AAGGCCACACTGGTGTGCCTGGCCACAGGCTTCTACCCCGACCACGTGGAGCTGAGCTGG

W V N G K E V H S G V S T D P Q P L K E TGGGTGAATGGGAAGGAGGTGCACAGTGGGGTCAGCACAGACCCGCAGCCCCTCAAGGAG

Q P A L N D S R Y  $\underline{\mathbf{A}}$  L S S R L R V S A T CAGCCCGCCCTCAATGACTCCAGATAC $\underline{\mathtt{get}}$ CTGAGCAGCCGCCTGAGGGTCTCGGCCACC

FWQDPRNHFRCQVQFYGLSE

 ${\tt TTCTGGCAGGACCCCCCCAACCACTTCCGCTGTCAAGTCCAGTTCTACGGGCTCTCGGAG}$ 

N D E W T Q D R A K P V T Q I V S A E A AATGACGAGTGGACCCAGGATAGGGCCAAACCCGTCACCCAGATCGTCAGCGCCGAGGCC

<TCR beta linker c-fos>
W G R A D P G G L T D T L Q A E T D Q L
TGGGGTAGAGCAGACcccgggGGTCTGACTGATACACTCCAAGCGGAGACAGATCAACTT

E D K K S A L Q T E I A N L L K E K E K GAAGACAAGAAGTCTGCGTTGCAGACCGAGATTGCCAATCTACTGAAAGAGAAAAAA

 $\frac{\text{linker}}{\text{L} \text{ E F I L A A Y }} \frac{\text{Biotinylation tag}}{\text{G G G L N D I F E A}} \\ \text{CTAGAGTTCATCCTGGCAGCTTACggatccGGTGGTCTGAACGATATTTTGAAGCT} \\$ 

Q K I E W H \*
CAGAAAATCGAATGGCATTAAGCTT